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Listing of the Claims

This listing of claims will replace all prior versions, and listings of claims in the application.

- 1. (canceled) A method for the production of para-hydroxy benzoic acid in a green plant comprising:
 - a) providing a green plant having an endogenous source of chorismate and containing a chorismate pyruvate lyase expression cassette having the following structure

P-T-C-D-CPL

wherein:

P is a promoter suitable for driving the expression of a chorismate pyruvate lyase gene;

T is a nucleic acid molecule encoding a rubisco chloroplast transit peptide;

C a nucleic acid molecule encoding a Rubisco chloroplast transit peptide cleavage site;

D is a nucleic acid molecule encoding from about 4 to about 20 contiguous amino acids of the N-terminal portion of a Rubisco chloroplast transit peptide donor polypeptide; and

CPL is a nucleic acid molecule encoding a mature chorismate pyruvate lyase protein;

wherein each of P, T, C, D, and CPL are operably linked such that expression of the cassette results in translation of a chimeric protein comprising a chloroplast targeting sequence fused to the N-terminus of the mature chorismate pyruvate lyase protein;

- growing said plant under conditions whereby the chimeric protein is expressed and translocated to the chloroplast for the conversion of chorismate to para-hydroxy benzoic acid glucoside and para-hydroxy benzoic acid derivatives;
- recovering para-hydroxy benzoic acid and para-hydroxy benzoic acid derivatives from the plant; and
- d) processing said para-hydroxy benzoic acid glucoside and para-hydroxy benzoic acid derivatives to free para-hydroxy benzoic acid.
- 2. (canceled) A method according to Claim 1 wherein the Rubisco transit peptide is derived from a plant selected from the group consisting of: soybean, rapeseed, sunflower, cotton, corn, tobacco, alfalfa, wheat, barley, oats, sorghum, rice, Arabidopsis, sugar beet, sugar cane, canola, millet, beans, peas, rye, flax, and forage grasses.

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- 3. (canceled) A method according to Claim 1 wherein the promoter is selected from the group consisting of the 35S promoter, the nopaline synthase promoter, the octopine synthase promoter, cauliflower mosaic virus promoter, the ribulose-1,5-bisphosphate carboxylase promoter and the promoter of the chlorophyll a/b binding protein.
- 4. (canceled) A method according to Claim 1 wherein the chorismate pyruvate lyase enzyme is encoded by the nucleic acid sequence as set forth in SEQ ID NO:3.
- 5. (canceled) A method according to Claim 1 wherein the chimeric protein comprising a chloroplast targeting sequence fused to the N-terminus of the mature chorismate pyruvate lyase protein has the amino acid sequence as set forth in SEQ ID NO:8.
- 6. (canceled) A method according to Claim 5 wherein the chimeric protein comprising a chloroplast targeting sequence fused to the N-terminus of the mature chorismate pyruvate lyase protein is processed to the amino acid sequence as set forth in SEQ ID NO:16.
- 7. (canceled) A method according to Claim 1 wherein the para-hdrooxy benzoic acid glucoside is produced at a concentration of a least 2% para-hydroxy benzoic acid glucoside per dry weight of plant biomass.
- 8. (canceled) A method according to Claim 1 wherein the para-hydroxy benzoic acid glucoside is produced at a concentration of at least 10% para-hydroxy benzoic acid glucoside per dry weight of plant biomass.
- 9. (canceled) A method according to Claim 1 wherein the green plant containing a chorismate pyruvate lyase expression cassette is selected from the group consisting of soybean, rapeseed, sunflower, cotton, corn, tobacco, alfalfa, wheat, barley, oats, sorghum, rice, *Arabidopsis*, sugar beet, sugar cane, canola, millet, beans, peas, rye, flax, and forage grasses.
- 10. (canceled) A method according to Claim 1 wherein the para-hydroxy benzoic acid is produced at a concentration of greater than 4.5% para-hydroxy benzioc acid per dry weight of plant biomass.
- 11. (Original) A chorismate pyruvate lyase expression cassette comprising a chimeric gene having a nucleic acid molecule encoding a ribulose-1,5-bisphosphate carboxylase small subunit chloroplast targeting sequence having an amino acid sequence as set forth in SEQ ID NO:15 operably linked to a nucleic acid molecule encoding a chorismate pyruvate lyase enzyme having the amino acid sequence as set forth in SEQ ID NO:4.
- (Original) A chorismate pyruvate lyase expression cassette according to
 Claim 11 wherein the chimeric gene encodes a polypeptide as set for the in SEQ ID NO:8.
 - 13. (Original) A plant comprising the CPL expression cassette of Claim 11.
- 14. (Original) The plant according to Claim 13 selected from the group consisting of soybean, rapeseed, sunflower, cotton, corn, tobacco, alfalfa, wheat, barley, oats, sorghum,

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rice, Arabidopsis, sugar beet, sugar cane, canola, millet, beans, peas, rye, flax, and forage grasses.

- 15. (canceled) A chimeric protein comprising a chloroplast targeting sequence fused to the N-terminus of the mature chorismate pyruvate lyase protein having the amino acid sequence as set forth ins SEQ ID NO:8.
- 16. (Original) An isolated nucleic acid fragment encoding a chimeric protein comprising a chloroplast targeting sequence fused to the N-terminus of the mature CPL protein has the amino acid sequence as set forth in SEQ ID NO:15.
- 17. (Original) An isolated nucleic acid fragment of Claim 16 having the sequence as set forth in SEQ ID NO:7.
- 18. (canceled) The chloroplast cleavage product of Claim 15 having the amino acid sequence as set forth in SEQ ID NO:16.
- 19. (currently amended) A nucleic acid fragment encoding the <u>amino acid sequence as set</u> forth in SEQ ID NO:16 processed protein of Claim 18.